

Tree Country

October 2017



the employee
newsletter of the
**South Carolina
Forestry Commission**

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from the desk of
STATE FORESTER
Gene Kodama



Good day,
We are blessed that we can say “Good day” right now given that the major hurricanes that have hit the US and its territories this year have not made a direct hit on South Carolina. Unfortunately, incredible damage has occurred in other states, Puerto Rico, and other Caribbean islands. Our thoughts and prayers continue to be with those in the impacted areas.

We have been able to send assistance to others, but have had to deal with some impacts here as well. Please see the stories of our Incident Management Team’s (IMT) deployment in this issue of the bulletin. We also want to thank our IMT for their continued dedication to helping others and representing our state so well. In addition, we have had Commission members deployed to help western states deal with another very active wildfire season, and are pleased to now have them safely back home.

In between weather events and other activities, we were able to finish two major administrative tasks and submit the necessary documentation Sept. 15. That day, we delivered our 2018-

2019 Executive Budget proposal to the governor’s office and also our 2016-2017 Accountability Report to the Department of Administration. Our team had been working on these two requirements for the past couple of months, and delivered both of them in high-quality form and on time.

In addition to those mandates, an audit of our Human Resources functions was completed by the State Human Resources Division, and our agency passed the audit with outstanding results, reflected in our 100% compliance rating. Thank you to our HR team for their great work! In addition to our agency’s more visible field, emergency, and citizen



State Forester Gene Kodama (second row, second from right) poses with other state foresters at the NASF annual meeting in Charleston, West Va. Sept. 18-21 at the state capitol building.

services provided to the state, our headquarters and administrative team also continually meet their objectives and our state requirements. These accomplishments are often not noticed, but are extremely important tasks that must be completed with top-quality work and in a timely manner. Thank you to all who make our agency look so good and function so well!

I attended the National Association of State Foresters Annual meeting last month in another Charleston. This Charleston is the capital of West Virginia. Our own South Carolina Charleston was once the capital of our state too, but that was changed to Columbia in 1788.

West Virginia is known as “Wild and Wonderful” for good reason. It is the only state to be entirely within what is known as the Appalachian Mountains. One of the speakers from the forest products industry whose family started a hardwood sawmilling business in the 1900s said his family said there was “Green Gold” in these mountains, and their company has proven that to be true with now over 10 high-production

hardwood sawmills and a large domestic and export lumber business.

There is “Green Gold” in our state also, as evidenced by the significance of the forests and forest industry here and the \$21 billion economic impact number and associated jobs produced. The NASF continues to be an exemplary organization representing all the country’s State Foresters at the federal level and working closely with many forestry partnering organizations on national and international stages. We can count on the NASF representing our agency and South Carolina’s forestry interests and providing our state with a strong voice in Washington D.C.

We have also been diligently working to select the next SC State Forester, as I plan to depart the Commission in January. The upcoming job opening was advertised July 1. Applications were reviewed, candidates selected, and interviews were conducted in two rounds, which were completed last week. The selection process was set on an aggressive schedule and kept on track by the selection committee with the assistance of our Human Resources Director Lynn Rivers.

The Committee is happy to report that the next SCFC Agency Director and SC State Forester will be confirmed Friday, Oct. 6 during a special called commissioner meeting at the Columbia headquarters at 1:30 p.m. Employees will be informed of the selection via email and/or text messages immediately after the commissioners officially appoint the new leader during their



Gene Kodama presented SCFC 90th anniversary coins to West Virginia State Forester Barry Cook, left, and Wyoming State Forester Bill Crapser at the WV State House. Cook also received a SCFC Challenge Coin in recognition of the WV Division of Forestry doing an outstanding job of hosting the NASF Annual meeting.

meeting. Commission partners and other business associates will be advised shortly thereafter. We look forward to completing the selection process and beginning the transition of agency leadership to the future director.

I will try to get out to our field locations during the next three months to see as many of our team members as possible before January. Please stop by if you are in the Columbia area before then.

Best regards,

Gene



On the Cover

The cover photo features a pine stand on Red Bluff Plantation in Jasper County.

Employee News

New Employees

We would like to welcome **Susan Brogdon** to the Columbia Headquarters. Susan is the new Administrative Assistant for the Forest Protection Division. Susan lives in Little Mountain and has a BS in business management from Alameda University in California. She has 20 years' experience in healthcare, primarily in pharmacy and corporate compliance. Susan is married with three children and several pets.

We would also like to welcome two new trades specialists for Manchester State Forest who began Sept. 18, Wade Truesdale and Robert Wilson.

Wade Truesdale is from St. Stephen and has an associate degree in forestry management from Horry-Georgetown Technical College in Conway. Wade previously worked for SCDNR as a fisheries technician. In his spare time he enjoys hunting and fishing.

Robert Wilson lives in Dalzell and attended school in Matoaca, Va.



Susan Brogdon



Wade Truesdale



Robert Wilson

Personnel News

Chesterfield/Kershaw/Lancaster Project Forester **Donnie McDaniel** resigned effective Sept. 21.

Retiree News

Retired Fairfield County Warden **Bill Garris** passed away Sept. 9. Bill retired in 1994.

Employees Help at Wood Magic



Members of the Wood Magic camp crew enjoy a short break before they serve pizza Sept. 22. From left to right are Greenville/Pickens Forest Technician Isaac Case, Construction & Property Manager David Owen, Anderson/Oconee Forest Technicians David Bagwell and James Robbins, and Greenville/Pickens Forest Technician Randy Culbreth.

CAUGHT ON CAMERA



Coastal Administrative Specialist Brenda Berry lights up the office with her smile.



Resource Development Director Tim Adams counts the rings on one of the downed virginia pine trees at the HQ. The tree was at least 35 years old.



Anderson/Oconee Sector Supervisor Jarrod Brucke waits on the buses to arrive at Wood Magic at the SC Botanical Garden in Clemson.



Temp pilot Spencer Perrine gets ready for takeoff from the Walterboro airport.

IMT Assists with Hurricane Harvey Disaster in Texas

Members of the Forestry Commission's Incident Management Team (IMT) left Columbia Aug. 29 to travel to Beaumont, TX. Beaumont is located about 85 miles east of Houston. The primary mission of the team's assignment was to assist Jefferson County with the basic needs of life (food, water, and facilities) for PODs- Points of Distribution, and shelters within the Hurricane Harvey operational area. Some of the tasks included visiting the PODs on a daily basis to assess the supplies on hand; managing a staging area behind the county courthouse for distribution of commodities (MREs-Meals Ready to Eat, bottled water, and ice); and conducting preliminary damage assessments of homes to provide data for FEMA.

Matthew Schlaefer, who used to work for the Forestry Commission in Horry County, moved to Texas about six years ago to work for the Texas A&M Forest Service. He was assigned to the SCFC IMT and proved to be a valuable source of information as well as support. It was like having a reunion having him work with us again.

There was no running water when the team first arrived, due to the Beaumont water treatment facility having been flooded. Bottled water had to be utilized for most of the assignment. The Incident Command Post was set up behind the Jefferson County Courthouse. The courthouse was built in 1931 and was 12 stories tall. The county Emergency Operations Center (EOC) was on the first floor, and we used the third floor for meeting space as well as sleeping quarters. Team members slept on cots wherever they could find a place. Even though we didn't have running water, functioning bathrooms, or a comfortable place to sleep, we still knew we had it better than many of the folks that had been impacted by the storm. Our team had a job to do, and they did it well.

The 18 SCFC IMT members assisting were Jonathan Calore-IC; Mike



IMT members with Texas Forest Service liaison Matthew Schlaefer on steps of Jefferson County Court House.

Bozzo- Deputy IC; Michael Weeks and Kip Terry-Safety Officers; Mike Shealy- Liaison Officer; Brad Bramlett- Information Officer; Lloyd Mitchell- Logistics Chief; Cathy Nordeen- Finance Chief; Jeff Riggin, Doug Mills, Shawn Feldner, and Eric West- Division Supervisors (DIVS); Scott Phillips- Plans Chief; James Douglas- GIS Specialist; Drake Carroll- Resource Unit Leader; Michael McGill- Ordering Manager/DIVS; Mike Thomas- Incident Tech Support Specialist; Pete Stuckey- Operations Chief.



Flooded section of Nome, Texas as the IMT drove into Beaumont.



Pete Stuckey works by the light of his cell phone.



Brad Bramlett shakes hands with Texas Governor Greg Abbott at the distribution center at Ozen High School in Beaumont, Texas.



IMT members Scott Phillips, Kip Terry, Drake Carroll, and Pete Stuckey work on information for the briefing.

IMT

- Brad Bramlett

Hurricane Harvey Wreaks Historic Devastation in TX

ABC News

Hurricane Harvey produced torrential rain, devastating winds, and widespread flooding that cost lives and forced more than 30,000 people from their homes in Texas. The storm caused extensive destruction that will likely make it one of the costliest storms in U.S. history.

Here is a look at the storm's historic devastation, by the numbers:

- **20 trillion gallons:** That's the total amount of rain that fell on the Houston area since the storm made landfall, a staggering deluge that represents enough water to supply New York City's needs for over five decades.
- **\$125 billion:** Texas Gov. Greg Abbot said his state will need federal relief money "far in excess" of that total, which would surpass Hurricane Katrina as the costliest storm in U.S. history.
- **51.88 inches:** The amount of rain recorded at Cedar Bayou on the outskirts of Houston in just under five days, marking a new record for the heaviest rainfall for a storm in the continental U.S., according to the National Weather Service.
- **13 million:** The estimated number of people directly affected as the storm went from Texas into Louisiana with Mississippi, Tennessee, and Kentucky all receiving rain.
- **3:** The number of times Harvey made landfall - once as a hurricane and twice more as a tropical storm.
- **30,000 - 40,000:** The estimated number of homes destroyed by floodwaters in and around Houston, according to Harris County Judge Ed Emmett.



The Buffalo Bayou floods Houston.



Submerged neighborhood in Houston.



Streets became rivers in the Houston area.



Harvey made landfall three times, once in Rockport Texas.



Flood victims flee the rising waters.

Programs

Wood Magic Returns New & Improved

The 2017 Wood Magic Forest Fair season got off to a great start at the SC Botanical Garden on the campus of Clemson University. Approximately 440 fifth-grade students attended the four-hour program September 19-22 with 55 volunteers working as guides, instructors, and food servers, as well as other behind-the-scenes jobs. Volunteers came from all backgrounds, agencies, organizations, and businesses, including the Forestry Commission, Clemson Extension, SC Master Naturalists, USFS, International Paper, Sonoco Recycling, Kapstone, The Forestry Association of South Carolina, Georgia-Pacific, Straka and Straka Consulting, and Clemson University. Fifteen C.U. Forestry Club members also volunteered throughout the week, gaining valuable experience in forestry education and outreach.

The Wood Magic Forest Fair program was moved from a fourth grade program to the fifth grade and was revised to emphasize connections to the fifth grade Science and English Language Arts education standards. The core of the program remains the same, but some of the language and points have been modified to address the standards. New logos, t-shirts, signage, teaching aides, and revised educational materials were made possible by an SFI grant and helped modernize the look of the program.

Thanks goes to SC Botanical Garden Director Patrick McMillan, Education and Resource Coordinator James Wilkens, and the SC Botanical Garden staff for helping to make the first Wood Magic Forest Fair event at Clemson a huge success!

Education

- Matt Schnabel



Wood Magic debuts its new logo at the event.



Anderson/Greenville/Oconee/Pickens Project Forester Trey Cox shows students that removing one ingredient (oxygen) from the three needed to sustain a fire can extinguish it. Fuel and heat are the other two.



Commissioner Eric Smith explains some of the gifts of the forest to students.



Coastal Stewardship Forester Vaughan Spearman gets a hair sample to do magic.



Edgefield/McCormick/Saluda Project Forester Henry Hutto gets trapped in the "Web of Life" at the Gifts station.



Forest Health Coordinator David Jenkins shows children how to make paper.



Spartanburg/Union Supervisor Jon Barker demonstrates one of the benefits of the forest.



Piedmont East Unit Forester Roy Boyd explains how to make particle board at the Sawmill station.

Caught ON Camera



Bamberg/Colleton Sector employees took a minute for a photo during their sector meeting. Pictured are (front, l to r) Supervisor Danny Collins, Forest Technician Johnny Crider, Forest Technician Daniel Beach, Forest Technician Allen Thompson, Forest Technician Ronnie Jones, Forest Warden Foch Hiott, (back) Forest Technician Jefferey Kemmerlin, Forest Technician Scott Ulmer, and Forest Warden Trent Rentz.



Two workers scale the 541 ft. radio tower behind the HQ Sept. 5.



SCFC employees Aiken/Barnwell Forest Technician Russell Hale, Manchester State Forest Assistant Director Ben Kendall, Horry/Marion Project Forester GraceAnna Schilz, and Clarendon/Sumter Project Forester Jacob Schimpf show their state colors at a fire tower while on western assignment at the Nelson Creek Fire in Montana.

US Hit by Another Strong Hurricane...Irma

Hurricane Irma intensified into an extremely dangerous high-end Category 5 storm with top sustained winds of 185 mph putting it among the strongest Atlantic hurricanes ever observed. Irma's winds are the most powerful ever measured in an Atlantic hurricane north of the Caribbean and east of the Gulf of Mexico.

As Irma tore through the Caribbean and approached the Keys, authorities had ordered millions in Florida to evacuate. Hurricane Irma stretched 300 miles in diameter and affected all of Florida in some way. From the Keys to the Panhandle, tons of debris were ripped from buildings and trees and strewn across roadways while as many as 12 million people lost power. Damage extended into Georgia, South Carolina, North Carolina, and Alabama. Strong winds blew down trees causing the loss of power to hundreds of thousands in South Carolina. Charleston city officials said the intense flooding there Sept. 11 closed more than 111 roads.



The Florida Keys were hit with very strong winds from Irma.

The Keys were largely evacuated by the time Irma barreled ashore Sept. 10 as a Category 4 hurricane with sustained winds of up to 130 mph. Wind gusts of 120 mph were noted in Big Pine Key, while Key Largo and Key West experienced 92 mph and 91 mph winds. A storm surge of 10 feet was recorded in the Florida Keys. According to the Federal Emergency Management Agency, 90 percent of homes in the Florida Keys suffered some damage. As many as 25 percent of all homes in the Florida Keys were destroyed, FEMA Administrator Brock Long said Tuesday evening, and as many as 65 percent of homes suffered major damage.

The highest wind gusts recorded in Miami were 99 mph. Naples had the highest recorded wind speeds in Florida, with gusts reaching 142 mph. The highest rainfall recorded in the area came in at 11.87 inches. A 7-foot storm surge was reported in at least one location in Naples, according to the National Weather Service. The cities of Jacksonville and Miami were flooded while bays on the west side were emptied.

Outside the U.S., Irma damaged or destroyed an estimated 90% of the structures on the island of Barbuda and the Dutch government estimates 70% of houses on St Maarten were badly damaged or destroyed.

The death toll from Irma, previously ranked as one of the most powerful Atlantic storms on record and the second major hurricane to strike the U.S. mainland this season, climbed to more than five dozen. Of those, 43 were killed in the Caribbean and at least 18 in the Southeastern United States.

Golden Rules (Part 3 of 9)

These are the Golden Rules developed by Dale Carnegie will change anyone's mind positively, even by attempting them. When such change happens, it will change the life for them and hence the lives of everyone they come in touch with them. <http://www.dalecarnegie.com/>

Principles from How to Win Friends and Influence People

Be a Leader

1. **Begin with praise and honest appreciation.**
2. **Call attention to people's mistakes indirectly.**
3. **Talk about your own mistakes before criticizing the other person.**
4. **Ask questions instead of giving direct orders.**
5. **Let the other person save face.**
6. **Praise the slightest improvement and praise every improvement. Be "heartly in your approbation and lavish in your praise."**
7. **Give the other person a fine reputation to live up to.**
8. **Use encouragement. Make the fault seem easy to correct.**
9. **Make the other person happy about doing the thing you suggest.**

HURRICANE IRMA AFFECTS CAROLINAS



Water crashed against the battery in Charleston and later breached the wall.



Lockwood Drive in Charleston flooded, as seen from the Medical University of South Carolina.



Across the state, trees were uprooted or snapped. The Columbia HQ also lost some trees.



Water flows over the wall at the battery and floods the streets of Charleston.



Forest Management Chief Russell Hubright carefully uses a chainsaw to remove the limbs so the tree can be carried away.



As Hubright saws, Equipment Coordinator Doug Mills moves in to lift the tree.

Statewide EAB Quarantine Now in Effect



Credit: Debbie Miller, USDA Forest Service,
Bugwood.org

Forest Health

- David Jenkins

The State Crop Pest Commission declared a statewide quarantine Monday, Oct. 2 for ash wood and wood products affected by the emerald ash borer (EAB).

The beetle pest that has devastated ash trees throughout the midwestern and eastern United States was officially detected in Greenville, Oconee and Spartanburg counties. According to Clemson University's Department of Plant Industry (DPI), the beetles were found Aug. 3 during a routine check of EAB traps and confirmed by the USDA Animal and Plant Health Inspection Service (APHIS).

The decision to invoke a statewide quarantine came after a month of deliberations by DPI staff, which held public hearings on the issue and considered recommendations for the affirmative from the SC Forestry Commission, the Foresters Council, the Society of American Foresters, loggers, landowners and other forestry- and forest products-related organizations and interests.

Quarantine

A quarantine simply means that neither ash trees (or any component thereof)

nor any type of hardwood firewood can be transported out of the counties that are under quarantine into those that are not; by extension, mills outside of those quarantined counties cannot accept it either. In the case of the emerald ash borer, a quarantine would apply only between March and October, as only the larvae are alive during this period (in South Carolina) and cannot fly to infest new trees.

Such a measure is imposed not only to help slow the spread of the beetle, but also to facilitate the expeditious removal

and processing of the affected trees and their wood. Extending the quarantine's boundaries outside of the counties where EAB was detected will allow landowners to harvest ash in the affected counties and move it to counties with the hardwood, veneer or other mills that take ash. After being processed in the mills, the wood is no longer subject to quarantine.

Material that falls under a quarantine include EAB insects themselves, ash trees, limbs, branches, stumps, roots, logs, lumber, chips and bark, and again,

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ALL hardwood firewood. Firewood is defined as any hardwood species cut to less than 4 feet in length.

Clemson University's Department of Plant Industry and APHIS will be working with industry to develop compliance agreements for ash material subject to the following treatments and/or conditions:

- heat-treated (140°F or 60°C for 60 minutes);
- if the bark plus 1/2 inch of sapwood removed;
- if the material is chipped to 1 inch or less in 2 dimensions; or
- if the material can be composted (composted material must reach 140°F or 60 °C for four days, AND the pile must be stirred after four days).

Compliance agreements will allow ash

wood to be moved from quarantined counties to counties that are not under quarantine. Although infested logs can be used by these industries, the massive die-off that is expected will mean that much less ash wood will be available to these industries in the future.

Management/treatment recommendations

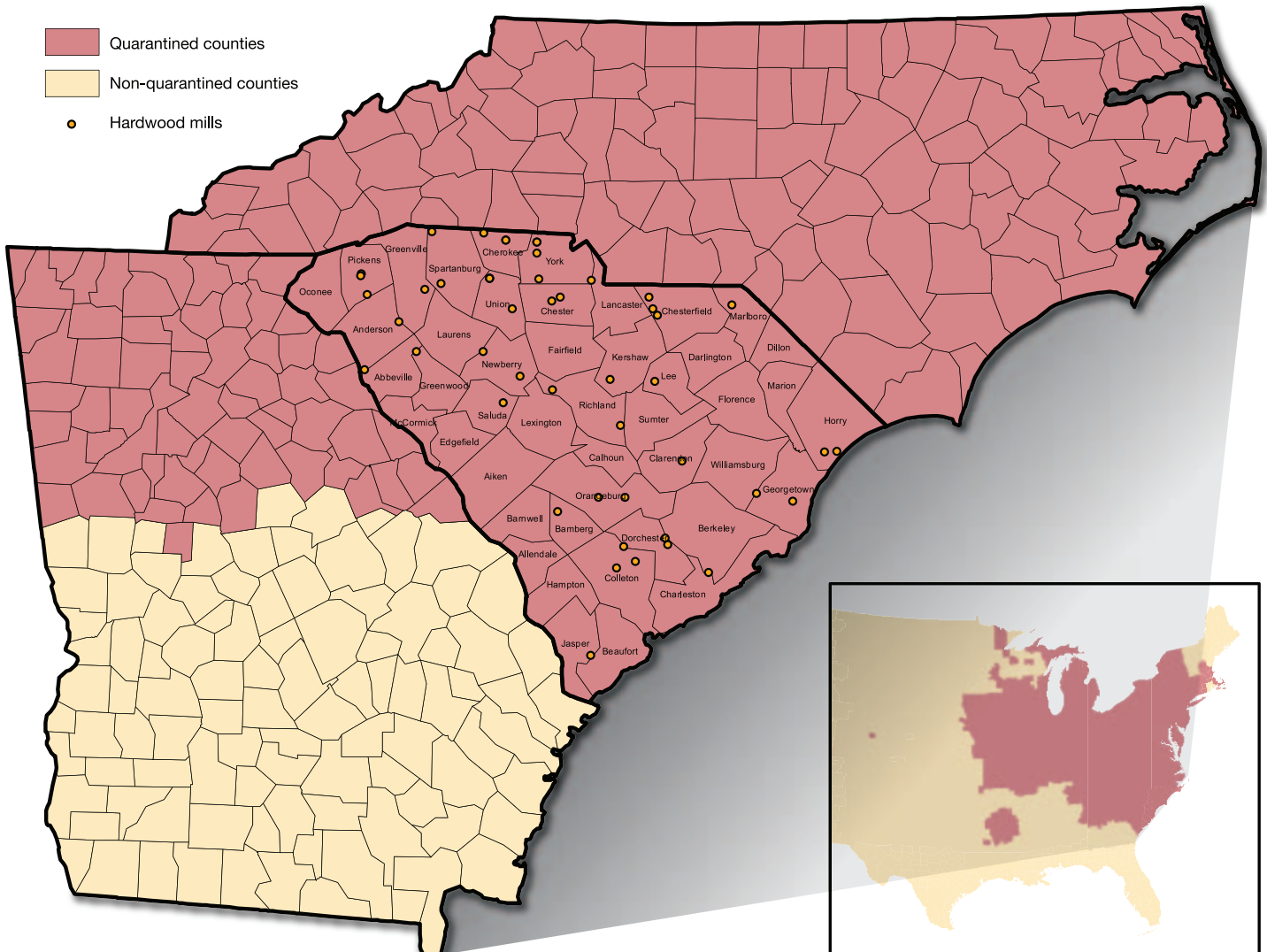
Eradicating the emerald ash borer is not a likely outcome, given the record of its persistent, state-by-state advance out of Michigan since 2002. Thirty states from Minnesota to Texas and Colorado to New Hampshire, plus the District of Columbia, have detected the invasive beetle and have imposed a mosaic of both county-to-county and full-state quarantines, depending on the severity of the outbreak.

“There are several options for both homeowners and forest landowners for protecting trees from this pest,” said SCFC Forest Management Chief Russell Hubright. “High-value trees can be saved through annual treatment with insecticides. Because of the cost of these treatments and the requirement to treat the entire stem of each tree, this option is not feasible for large forested areas.” Evidence suggests the beetle is present long before it is found, in which case the recent detection in South Carolina suggests that it is already present elsewhere in the state.

But treatment options are still available both homeowners and forest landowners who want to protect individual trees from this pest. High-value trees can be saved through annual treatment with an array of insecticides; however, the cost

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Regional Map of EAB-Quarantined Counties



of these treatments and the requirement to treat the entire stem of each tree makes this option less feasible – in fact, nearly cost-prohibitive – for large forested areas.

For those interested in pursuing pesticide treatment options, a coalition of universities under the banner of the North Central Integrated Pest Management Center has already developed a very comprehensive publication that landowners will find very useful and informative. Titled, *Insecticide Options for Protecting Ash Trees from Emerald Ash Borer*, the guide is an extensive resource that lists all approved treatments and answers the most frequently asked questions. View/download this publication at www.emeraldashborer.info/files/multistate_eab_insecticide_fact_sheet.pdf.

The biggest costs associated with the arrival of the emerald ash borer in other states have been related to the mitigation efforts in urban environments with a heavy ash component. These efforts include pesticide treatments for high-value trees, tree removal and disposal, and replanting efforts. Because South Carolina's urban environments do not have a large component of ash, we expect the biggest impacts to be environmental; the loss of ash trees in bottom land hardwoods where they are typically found will create gaps that invasive plants, including Chinese privet, can capitalize on.

What is EAB, and why is it so destructive?

The emerald ash borer, *Agrilus planipennis*, is the most destructive

insect pest of ash trees in North America, decimating ash trees in urban and forest environments. They have killed tens of millions of ash trees as they have moved from their initial infestation in Michigan in 2002.

Hosts

This insect pest attacks all native ash trees (*Fraxinus* spp.) and has also been recorded in fringe trees (*Chionanthus virginicus*), both in the olive family. Manchurian ash is resistant, and there are hybrids between native ashes and Manchurian ash that are tolerant or even resistant.

Signs/symptoms

Adults are approximately 8.5 millimeters (0.33 inches). Symptoms include epicormic growth (shoots

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Signs and Symptoms of Emerald Ash Borer Infestation and Damage



Canopy die-back, with thinner foliage

Credit: Joseph OBrien, USDA Forest Service, Bugwood.org



Growth of sprouts from the base of the tree

Credit: Joseph OBrien, USDA Forest Service, Bugwood.org



Bark splitting

Credit: Pennsylvania Department of Conservation and Natural Resources, Bugwood.org



Serpentine galleries under the bark

Credit: Pennsylvania Department of Conservation and Natural Resources, Bugwood.org



D-shaped exit holes

Credit: Pennsylvania Department of Conservation and Natural Resources, Bugwood.org



Woodpecker damage

Credit: David Cappaert, Bugwood.org

emerging from the base of the tree) and reduced foliage and chlorotic foliage. Signs of infestation include bark splitting, galleries beneath the bark and D-shaped emergence holes in the bark. Heavily infested trees often attract woodpeckers that feed on the larvae and the prepupae.

Life cycle

Adult emergence generally coincides with full bloom of black locust trees in the spring. The adults feed on ash foliage and lay eggs on the bark. The larvae chew through the bark into the phloem and cambium of the tree where they feed and develop. Infestations usually start high in the trees, moving down the trunk as the population of borers grows. Larval feeding in the phloem reduces the transport of nutrients and water, causing the tree to decline. Eventually, the feeding galleries girdle the tree, killing it.

Timeline

Adults emerge in the spring and, like most *Agrilus* spp., nibble on the foliage of their ash hosts. They mate, and the females oviposit in crevices in the bark. In cold environments or very healthy trees, it may take two years for a larva to mature to an adult.

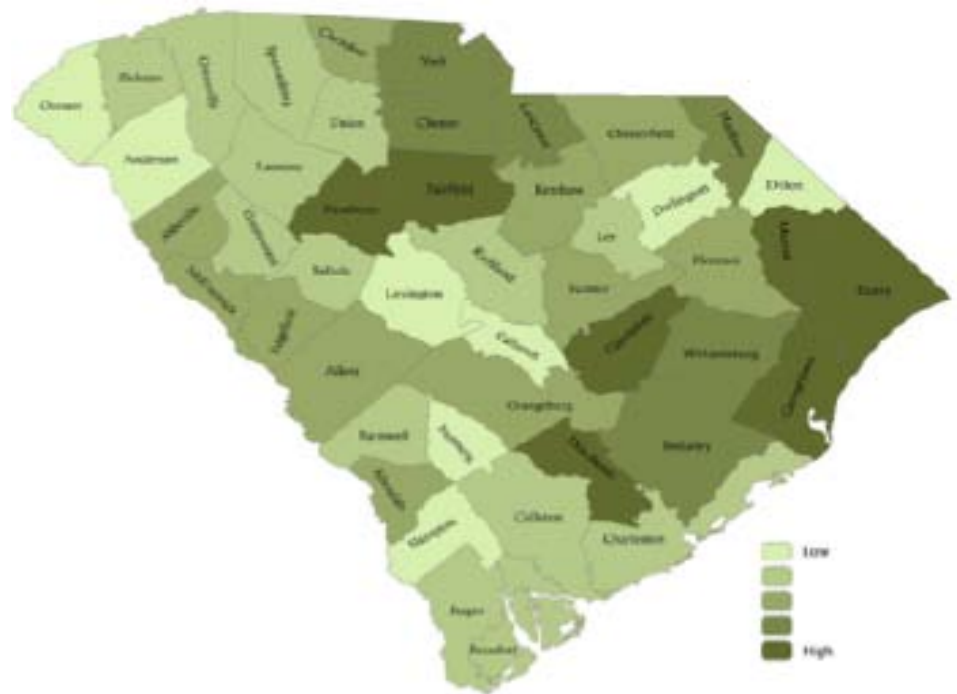
Range

This buprestid beetle is native to Asia, but has invaded the northeast and Midwest of North America. It is steadily moving southward. Isolated populations have been recorded from suburban Atlanta to much of North Carolina and Tennessee.

The ash resource in South Carolina

Ash species can be found throughout the state, occurring in all 46 counties. The four species of ash that occur in South Carolina (white, green, Carolina and pumpkin) all generally perform well under moist to wet conditions, and in rich soils. Ash is also planted as an ornamental shade tree in neighborhoods and other urban settings. Carolina and pumpkin ashes, which

Occurrence Per Acre of Ash in South Carolina



occupy frequently flooded or inundated areas for portions of the year, are not considered as economically important as the green and white ash species, and they compose less than 10 percent of the ash species group across the state by occurrence. White ash, in particular, may be found from lower to mid-slope sites, and prefers more well-drained soils. It is also considered the most economically valuable of the ash species, though all species in this group are often marketed together as simply ash spp.

Green ash is the dominant ash species in the state, accounting for 84% of the recorded occurrences by FIA survey. All four species of ash together account for just over 1 percent of the state's forest inventory.

Wood of the ash species is valued for its toughness and elasticity. It is frequently used in tool handles and implements, and also in furniture making and interior finishing. In some instances, pumpkin ash may be sold separately, as the wood may have a lighter appearance, but generally speaking, all species of ash in South Carolina have similar color and characteristics.

The ash group ranks in the top 20 species by volume for the state, with a total of 12.1 million tons for all trees

5-inch or greater on timberland in the current inventory. With the exception of the 16-inch dbh class, volume across size classes follows a normal distribution. 6.0 million tons fall within the 12- to 18-inch diameter range, with 8.2 million tons total in the sawtimber size class (12+ inches) (Figure 2). Standing volume has fluctuated over recent years, from 12.7 million tons in 1993 to a low of 10.0 million tons in 2001, before recovering gradually to current levels.

Average annual removals has experienced large shifts over time, from just over 100,000 tons in 1968 to 52,000 tons in 2014, with peaks over 160,000 tons in 1986, 1993, and 2006. The current growth/drain ratio is 2.84. Current stocking of ash is at its highest point in over 20 years. Harvest trends are not easily discernable, and do not seem to correlate to changes in standing volume. Ash is available across the entire state; however, distribution was dominated by the green ash component, and further investigation may be required if white ash was of sole interest. Given current information, there are opportunities for further development of this target resource.

Around the state

Jimmy Smith Retirement Lunch

Sand Hills State Forest celebrated Equipment Operator Jimmy Smith's earlier retirement with a chicken bog luncheon Aug. 9 at the Sand Hills Shop with several employees, family, and friends attending.

Jimmy received several gifts including an Academy Sports gift card, an AJ Rabon custom-made knife, and a toy replica of the John Deere tractor he drove on Sand Hills.



Jimmy shows off his John Deere tractor surrounded by Sand Hills State Forester employees.



Jimmy Smith admires the handmade knife created by AJ Rabon.



Employees, retirees, family and friends enjoyed the meal and fellowship.



Sand Hills Forest Director Brian Davis presents Jimmy with the tractor and a few stories.

Did You Know?

The percentage of Africa that is wilderness is 28%. The percentage of North America that is wilderness is 38%.

The average number of people airborne over the U.S. in any given hour is 61,000.

The cost of raising a medium-size dog to the age of eleven is \$ 16,400.

The first novel ever written on a typewriter was *Tom Sawyer*.

IMT Assisting National Disaster Medical System Following Maria

For the first time in U.S. history, the National Disaster Medical System's Federal Coordination Center was activated because of damage from the recent hurricanes, and the South Carolina Forestry Commission Incident Management Team (IMT) was assigned to assist.

The SCFC IMT was deployed Sept. 24 to the Columbia Metropolitan Airport as part of the National Disaster Medical System. The IMT provided logistical and operational support to several agencies including the US Army and area hospitals which will be receiving and providing care for patients who are being evacuated from hospitals in the Caribbean as a result of the extensive damage caused by Hurricanes Irma and Maria.

The SCFC IMT along with the US Army Medical Activity Department from Ft. Jackson and several other agencies received 18 patients from the US Virgin Islands, do triage, and transport patients to local hospitals. These patients were flown to the Columbia Metropolitan Airport and received care at one of a dozen hospitals in and around the Midlands.

The SCFC IMT has practiced the use of this National Disaster Medical System several times during the last few years along with the military and other partners and is grateful for the opportunity to put their skills to use in this vital mission.



An ambulance and staff await medical evacuees at the Columbia Metropolitan Airport.



Staff checks in at the airport.



Gov. Henry McMaster stopped by the airport and spoke to Incident Commander Jonathan Calore at the NDMS event.



Members of the night shift wait on patients to arrive Sept. 27-28 in the hangar. Pee Dee Regional Forester Mike Ney and Special Projects Coordinator Lloyd Mitchell are on the back row.

NO PUN INTENDED...

Nineteen moviegoers go to the cinema. The ticket lady asks "Why so many of you?" Buddy replies, "The film said 18 or over."

My daughter asked me for a pet spider for her birthday. So I went to our local pet shop and they were \$70. Forget it, I thought, I can get one cheaper off the web.

Schilz Presents North Myrtle Beach With Tree City Recognition

North Myrtle Beach (NMB) was recently recognized as being a Tree City USA Community for the 12th year.

Horry/Marion Project Forester GraceAnna Schilz presented NMB Mayor Marilyn Hatley the award and flag at the North Myrtle Beach Sports Complex Sept. 23.

The town was holding an environmental festival that was themed GOGO (Get Outdoors, Get Offline). The festival saw participation from several natural resource groups like the Birds of Prey , NMB Sea Turtle Groups, and Alligator Adventure.

GraceAnna stepped in for Pee Dee Urban Forester Lois Edwards, who was on vacation. Lois was very grateful for GraceAnna's willingness to help her out.



Edwards Enjoys Her Fishing Vacation

Pee Dee Urban Forester Lois Edwards recently went on a fishing trip to British Columbia. She and husband Alan fished for salmon and white sturgeon in the Fraser River, which is about two hours from Seattle. Lois reeled in a 71-inch white sturgeon weighing 116 pounds all by herself. Unfortunately, she didn't get to bring any of the fish home because it was under catch and release regulations. Way to go Lois!



Lois Edwards and husband Alan with her big sturgeon.



Lois also caught lots of pink salmon, also called Humpies, on her trip.

Caught Camera



Pee Dee Stewardship Forester James Brunson took this photo of the exposed tap root of a loblolly pine in Chesterfield County. The road had eroded away, exposing the roots. Notice the size of the root in comparison to the biltmore stick leaning against it.



Chief Pilot Sam Anderson took this photo of three hognose snakes found in his neighbor's pool. They have a pair of blotched marks on the head and a stocky body. Hognose feed exclusively on toads.



Public Information Director Doug Wood took this photo of an eastern fence lizard basking in the sun behind the office, trying to blend in.

The beautiful gold dome of the West Virginia state capitol building. (Photo by Gene Kodama)



Programs

Southern Pine Beetle Spots Detected via Aerial Survey

The SC Forestry Commission (SCFC) Forest Health Protection Team (David Jenkins, Chisolm Beckham and Kevin Douglas) flew with SCFC Chief Pilot, Sam Anderson, to conduct a 10% Aerial Survey of Anderson, Oconee and Pickens counties in response to reports of forest damage from Hurricane Irma Sept. 15. A 20 percent Aerial Forest Health Survey was conducted simultaneously since significant numbers of SPB were caught in the same counties during our spring 2017 SPB Pheromone Trapping Survey.

During the aerial survey, north and south grids located every five minutes of longitude were flown at approximately 1,500-2000 feet above ground and observations were recorded on one side of the plane. Since every minute of longitude is approximately one mile apart, the percent survey is calculated by limiting the observation distance from the grid: ½ mile for storm damage and 1 mile for forest health.



A SPB spot that the Forest Health Protection Team found in Georgia Sept. 15, 2017.

The storm damage was minimal and aerial observations of damage were limited to the eastern slopes of the highest elevations, which only exhibited slightly less defoliated canopies when compared to the more protected western slopes. Our observations seem to confirm what Sam Anderson thought before we embarked on our survey, that the higher elevations had higher wind speeds than the lower elevations.

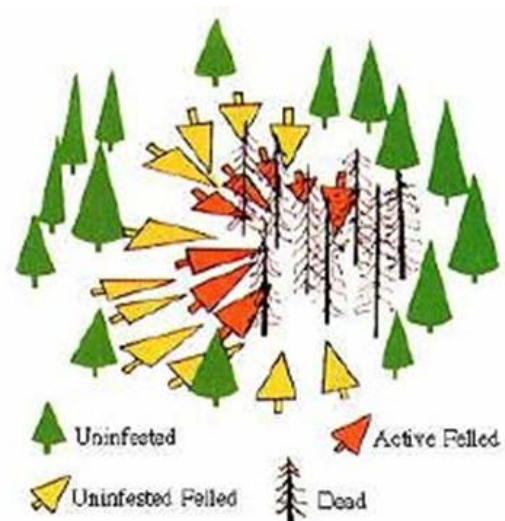
The most revealing observation during the aerial survey were the six SPB spots: three in Rabun County, Georgia (detected between grids) and three in Oconee County, South Carolina. All of the spots contained 20-200+ trees, are within un-thinned pine plantations ranging from 17-30 years old, are currently active with faders (yellow crowns) present, and are only located on mountainous National Forest lands. No spots were located in big saw timber, and Google Earth's latest imagery (spring 2017) reveals that all had just recently formed over the 2017 summer.

The SCFC Insect and Disease team provided coordinates of the detected SPB spots to the US Forest Service Sumter National Forest Pickens District, US Forest Service Chattahoochee National Forest Chattooga River District, and to the US Forest Service Region 8 Forest Health Protection Team. We are currently planning site visits on Oct. 12 with members of the above mentioned groups. Suppression efforts will likely be the next step, which can be accomplished with either the Cut-and-Leave or the Salvage/Thin-and-Removal tactic, or a combination of both.

During the Cut and Leave tactic, the most recently attacked trees (yellow-crowned) are the first ones felled toward the spot's center. An adjacent horseshoe-shaped buffer of un-attacked trees (green-crowned) are also felled toward the spot's center and to a width equaling the average stand height. Once the pines are on the ground, the

Forest Health

- Chisolm Beckham



Cut-and-Leave Tactic

(continued next page)

(SPB Continued)

pheromone synchrony of SPB becomes disrupted and the spot usually stops growing. The disadvantages of this tactic are the loss of healthy trees and timber income, and that it's most effective when spots are small and actively expanding between May and October. This tactic can also be used for larger spots if having to wait a long period before conducting a Salvage/Thin and Removal.

The Salvage/Thin and Removal tactic is the same as the previous except trees are salvaged/utilized rather than left. Priority is placed on buffer trees during spot expansion between May and October and on trees with living brood between November and April. Commercially thinning the whole stand to a density that reduces SPB risk is also usually employed to make this tactic economically feasible.

Cut-and-Leave Tactic

Dead trees completely vacated by SPB have the option of being salvaged or left for wildlife. Pines that have yet to be attacked by secondary insects such as Ambrosia Beetles can still be marketed as timber used for dimensional lumber. Ambrosia beetles bore radially into the tree's sapwood once its moisture content falls below 50 percent. Their boring reduces the sapwood's strength for dimensional lumber, making them only suitable for paper pulp or fuel. Signs of their boring are white, flour-like dust at the tree's base.

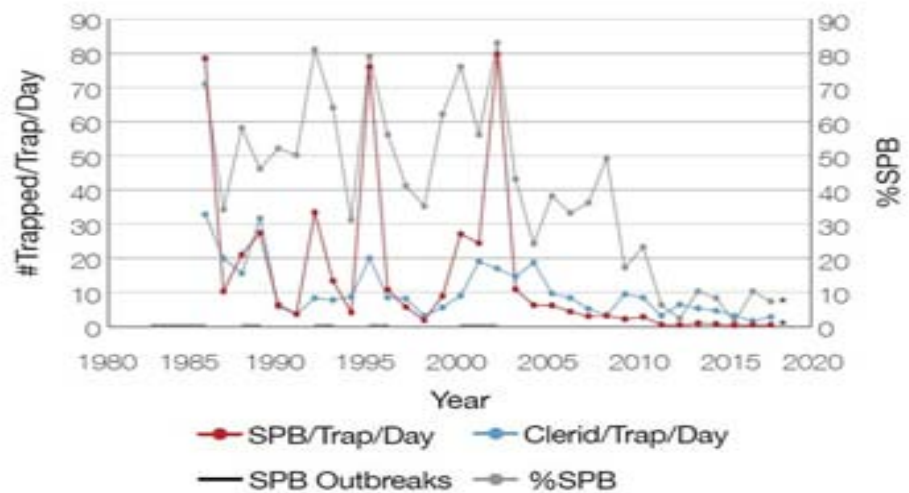
Continued aerial observations by the SCFC Forest Health Protection Team are planned next spring for these spots and the possible detection of new ones. With help from SCFC field personnel, the same team conducts an SPB Pheromone Trapping Survey each spring for 32 SC counties having historical pine loss to SPB. During this survey, three pheromone traps are deployed within each participating county over a 4-week period just as dogwoods are beginning to bloom. The amount of SPB and Clerid (SPB's main predator) caught per trap day and the percent catch of SPB are used to predict pine loss from SPB. Counties with predicted pine loss from the SPB Pheromone Trapping Survey will be included with the aerial survey.

Although SC's SPB population is still low on an historical basis, the annual decline since the last outbreak of 2000-03 appears to have ended in 2015. Between 1986 and the end of the last outbreak in 2003 we caught 24.3 SPB per trap day on average. Our SPB catch peaked during the last outbreak in 2002 when we caught 79.7 SPB per trap day and steadily declined until 2015 when we caught 0.03 SPB per trap day. Our SPB catch has increased since, and in 2017, with the addition of an extra pheromone, endo-brevicomin, we caught 1.14 SPB per trap day, 93.5% from Oconee and Pickens counties. On a comparable basis, the 2017 SPB catch could be closer to 0.18 SPB per trap day since endo-brevicomin was not used in previous surveys and preliminary studies have found its addition to be 6.5X more attractive to SPB. Regardless, increasing numbers of SPB within these counties this past spring coupled with the presence of these spots confirms that SC's SPB population is rising.

Landowners in Anderson, Oconee and Pickens counties are still more likely to lose pines to Ips and Black Turpentine Beetles than SPB. Using the Cut and Leave tactic for these beetles does not disrupt pheromone synchrony and will lead to more pine loss if SPB is not the culprit. If bark beetles are suspected, then it is advised to contact the SCFC for identification and possible courses of action.

With these recent developments, we strongly encourage foresters and forest landowners statewide to manage for regulated forests by evenly distributing their pine acreage among age classes, thin on a timely basis, consider harvesting at-risk stands sooner, and pay close attention to the SCFC SPB Pheromone Trapping Survey.

SCFC's Southern Pine Beetle Trapping Results
1986-2017



* In 2017, endo-Brevicomin was added to the previous used attractants of Frontalin and Sirex. A study found this new attractant combination on average was 6.54X more attractive to SPB and .97X less attractive to Clerid. To better compare 2017 to previous years, the number of SPB Trapped/Trap/Day was divided by 6.54, but the number of Clerid was left the same.

Foley Paddles Through the Grand Canyon

Assistant Education Coordinator Beth Foley recently vacationed in Arizona. She departed Aug. 12 down the Colorado River for a 19-day rafting trip through Arizona. Along with 16 friends, five oar-rigged rafts, four kayaks, and one squirt boat, they paddled 280 miles through the Grand Canyon.

Each day they unloaded their boats, set up the kitchen/camp, cooked meals, washed dishes, and filtered water (when needed) as opposed to having a guide do all this. Beth was surprised at how much work this took.

Her favorite part of the trip was all of the beautiful day hikes. She said, "It was amazing to see the different ecosystems within the Arizona desert. Numerous hikes were up crystal clear creeks back to extraordinary oasis filled with vegetation and even waterfalls. We got to see all kinds of wildlife including countless bighorn sheep."

Her least favorite part of the trip was worrying about scorpions and tarantulas as she walked through camp at night. Unfortunately, they had one person get stung by a scorpion, while asleep on a raft of all places.

Beth recollected, "It is hard to put into words the vastness and beauty of the Canyon, especially the view from the Colorado River. It is truly a unique and magical place. The Canyon taught me to really live in the moment and appreciate every detail of it. I had an experience of a lifetime and don't think any other trip will be able to compare. If you have the opportunity to do a similar trip, I highly recommend it!!"



Beth Foley holds a red spotted toad she found along the river.



View of the Colorado River from the Nankoweep Granaries.



Sunrise at camp along the Lake Mead silt flats on day 19.



Beth takes a hike to see the Whitmore pictographs.



Rafts are docked where the clear water of Havasu Creek met the muddy Colorado.



Beth rows an oar-rigged raft down the river.

Employee Service Awards



SERVICE AWARDS FOR OCTOBER

Employee's Name	Position	Location	State Service
Isaac Case	Forest Technician	Greenville/Pickens Sector	10 years
Adam Hudson	Forest Technician	Wee Tee State Forest	10 years
Justin Johnson	Forest Technician	Williamsburg Sector	10 years
J.P. Truesdale	Forest Technician	Georgetown Sector	10 years
Chad Walters	Forest Technician	Chesterfield/Lancaster Sector	10 years

Pizza Anyone?



Greenville/Pickens Forest Technician Jamie Smith helps distribute pizza to the fifth graders at Wood Magic at the SC Botanical Garden.

Common American Customs Considered Offensive in Other Countries (Part 20)

MSN Business Insider

There are a number of customs and gestures that Americans use without thinking twice. But when traveling abroad, they will not only out you as a tourist, but could get you in hot water in other countries. Here are some of the most common American customs that are seen as offensive elsewhere.

20. Not declining gifts

Americans are quick to accept gifts, favors, and invitations, and often without offering something in return. However, many cultures (like in Japan) expect you to decline things a few times before ultimately accepting them. In China, you're even expected to refuse a gift three times before accepting it.

Human Resources

Open Enrollment Oct. 1-31, 2017

October 1-31, 2017 is open enrollment for active state employees. During open enrollment, active employees can make the following changes:

- Health Insurance – you can enroll in, change or drop health plans for yourself and/or your eligible family members.
- Dental & Dental Plus- you can enroll in, change or drop dental or dental plus plans for yourself and/or your eligible family members.
- Vision - you can enroll in or drop vision coverage for yourself and/or your eligible family members.
- Optional Life – you can enroll in or increase your optional life coverage up to \$50,000 without medical evidence of good health. You may also decrease or cancel coverage.
- MoneyPlu\$ - you can enroll in Flexible Spending Accounts. If you are currently enrolled in MoneyPlu\$ Medical Spending or Dependent Care, you must re-enroll to continue accounts for 2017. This can be done electronically at www.myFBMC.com.

The following FREE preventive health benefits are available to eligible employees through PEBA Perks: colorectal cancer screenings; preventive biometric screening; tobacco cessation (Chantix, generic Zyban); diabetes education; adult vaccinations; stress management program; flu vaccine; No-Pay Copay-free generic drugs for some chronic conditions.

An overview of insurance options for 2018 will be discussed at the benefit sessions below.

Human Resources

- Lynn Rivers

2017 Benefit Open Enrollment Sessions

PEE DEE

October 9	9:30 AM	Marion Office, 136 Airport Court, Mullins, SC 29574
October 10	10:00 AM	Chesterfield-Sand Hills State Forest, 16218 Hwy 1, Patrick, SC 29584
October 11	9:30 AM	Kingstree Office, 596 I M Graham Road, Kingstree, SC 29556

PIEDMONT

October 5	9:30 AM	Piedmont Regional Office, 39 General Henderson Road, Newberry, SC 29108
October 5	1:30 PM	Spartanburg Office, 725 Hwy 56 S, Spartanburg, SC 29302

COLUMBIA

October 24	2:00 PM	SC Forestry Commission HQ, 5500 Broad River Road, Columbia, SC 29212
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During open enrollment 2017, employees can change their coverage anywhere they have internet access using MyBenefits, the State Health Plan's online enrollment system at <https://mybenefits.sc.gov/mybenefits>. Changes made during October 1-31, 2017 will be effective January 1, 2018.

For assistance, please contact Kris Anderson, Benefits Administrator, (803) 896-8872, Erica Brazile Human Resources Manager, (803) 896-8871 or Lynn Rivers, Human Resources Director, (803) 896-8879.

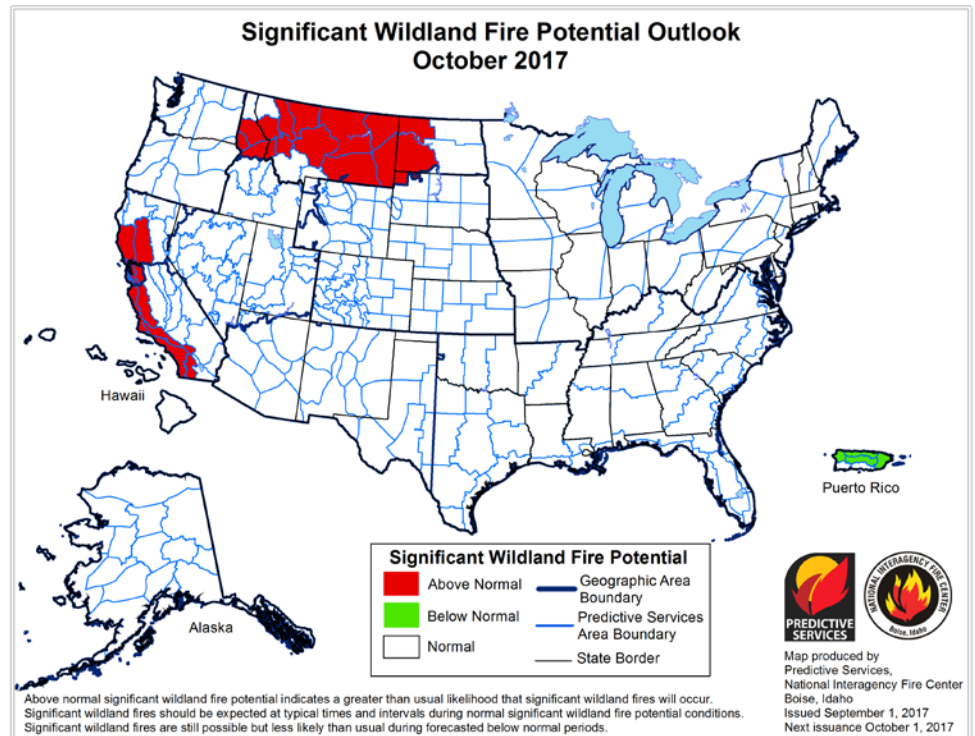
Fire Weather Outlook

The Western fire season is reaching its peak for 2017. While the frequency and density of lightning occurrence has begun its seasonal decline, occasional lightning bursts are still being observed. Most of the new lightning-caused fire starts are being effectively handled with initial attack, but a few are still developing into larger incidents that require additional resources. Drier and warmer than average conditions across the central Great Basin and Southern California are allowing for the fine fuels to become more receptive to fire activity. A slight upturn in initial attack activity is being observed in both areas. Cool and wet conditions have arrived in Alaska. Its season has effectively ended.

Fire season will peak as the fuels remain much drier than average and as existing precipitation trends continue. Decreasing solar radiation received and longer nights will allow for fuel moistures to begin recovering. Should a season-slowing weather event not occur, this will be sufficient to allow for the fire activity across the northwestern states to begin to decrease significantly late in the month. Significant large fire activity will remain possible in foehn wind-prone areas like the Rocky Mountain Front and across Southern California through November and will be event-driven should they occur.

Southern Area: Below Normal significant large fire potential is expected across the Ark-La-Tex, southeastern Texas, Florida, the Outer Banks along the Carolina coast and Puerto Rico in September. Normal significant fire potential is expected in all areas except Puerto Rico in October where Below Normal significant fire potential is expected. In November and December, Above Normal significant large fire potential is expected across north central Texas and most of Oklahoma, and Below Normal significant large fire potential is expected across portions of the Deep South in November and December.

Drought conditions have been mitigated across most of the region over the past several months as several stalled fronts brought significant rainfall amounts to the Southern Area. Existing trends are expected to continue as the region enters the peak of the Atlantic Basin's tropical season. The preexisting ENSO neutral conditions are conducive for tropical and non-tropical development near coastal areas early in the outlook period. The combination of the potential increase in system development with the passage of periodic wet cold fronts will lead to a potential for above average precipitation. Latest data suggests that following the tropical peak, a drier pattern may develop for mid-late fall across central Texas and Oklahoma. As a result, fire potential will become elevated during the seasonal transition. However, preexisting moisture received is expected to be sufficient to carry the region through a short, dry stretch. Temperatures should be near to slightly above normal for the outlook period.



Current Fire Numbers for South Carolina

MONTH AND YEAR TO DATE COMPARISON TO PREVIOUS 5 AND 10-YEAR AVERAGE

Time Period	SEPTEMBER		JULY-SEPT		FISCAL YEAR	
	FIRES	ACRES	FIRES	ACRES	FIRES	ACRES
5 Year Average	41	88	217	1,000	1,646	9,744
10 Year Average	103	303	344	1,672	2,162	14,889
Current FY ¹	61	190	123	366	123	366

¹To date for current fiscal year

TREE SONGS

*I was born country and that's
what I'll always be.*

*Like the rivers and the
woodlands wild and free.*

Song: "Born Country"

Artist: Alabama

Released: 1991

Listen: <https://www.youtube.com/watch?v=zmMFr8B92VY>

Can you think of a song with
tree- or forestry-related lyrics?
Let us know, and we'll share it
with everyone.

Photo of the Month



This photo was taken by Forest Health Coordinator David Jenkins while surveying damage from Hurricane Irma. It shows a flooded area on Frapp Island where a golf course looks like a lake.

New Grand



Deputy State Forester Tom Patton and his family welcomed his second grandchild, Addison Grey Higginbotham, to the world Friday, Sept. 1. Here, "Addie Grey's" 4-year-old brother Logan holds his newborn little sister, who weighed 7 lbs, 3 oz.

Quote of the Month

*"Optimism is the
faith that leads to
achievement. Nothing
can be done without
hope or confidence."*

Helen Keller

Please send in your
photos or news to
Michelle Johnson at
mjohnson@scfc.gov.